TYROPHAGUS OUDEMANS, 1924 (ACARINA): PROPOSALS TO CLARIFY THE NAME OF THE TYPE SPECIES AND TO CONSERVE THE NAME OF AN IMPORTANT PEST SPECIES. Z.N.(S.)1450

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The present application concerns names which may properly be applied to species of Acarina of the genus *Tyrophagus* Oudemans, 1924. Its first object is to request the International Commission on Zoological Nomenclature to use its plenary powers to suppress the specific name *dimidiatus* Hermann, 1804, on the grounds that it is a *nomen dubium*, thereby rendering *longior* Gervais, 1844, the oldest available name for the species called *Tyrophagus dimidiatus* by Oudemans (*Tijdschr. Ent.* vol. 67, p. xxv, 1924). The Commission is also requested to place on the Official List the nominal species *longior* Gervais, 1844, and also the nominal species *putrescentiae* Schrank, 1781, type of the genus *Tyrophagus*, for which species the writer has designated neotypes on pages 165 and 157 respectively of *Aust. J. Zool.* vol. 7(2), 1959. Details of the case are as follows:—

2. In 1924 when Oudemans (*Ent. Ber. Amst.* vol. 6, p. 250), erected the genus *Tyrophagus*, he placed in it *Acarus dimidiatus* Hermann, 1804 (*Mém. Apter.* p. 85, pl. 6, fig. 4), among other species, and great confusion has continued to centre around this name. Having decided earlier that Hermann's *dimidiatus* belonged to the generic complex within which he distinguished *Tyrophagus* in 1924, Oudemans must have remained doubtful about the species to which it should be applied. He appears to have used it first in 1906 for a form which is now known by his later name *Tyrophagus australasiae*, but in 1924 he transferred it to a species of *Tyrophagus* which had been called *longior* Gervais for the preceding eighty years, and which was sufficiently clearly described and illustrated during that time as still to be recognizable in the light of current knowledge.

3. Despite the final stand taken by Oudemans, more recent authorities have been unable to agree on the identity of Hermann's *dimidiatus*. Some, for example Zakhvatkin, 1941, consider it to be unrecognizable, while others have applied the name to one or other of at least four different species.

4. In addition to the doubt which exists on the correctness of Oudemans' initial action in introducing *Acarus dimidiatus* into the group of which *Tyrophagus* is a part, and the threat to stability represented by the failure of present-day authorities to agree on the

identity of the species to which the name should be applied, still further doubt on the nomenclatural status of *dimidiatus* is cast by close examination of Hermann's original description and illustrations.

EXTRACT FROM: A REVISION OF THE GENUS *TYROPHAGUS*, WITH A DISCUSSION ON ITS TAXONOMIC POSITION IN THE ACARINA, *Aust. J. Zool.* vol. 7(2), pp. 146–181, 1959,

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'Hermann's (1804) description of *dimidiatus*, in French, states: "Abdomen spherical, of a yellowish green in front, white behind and underneath, with radiating hairs, longer than the body [this description is repeated in Latin], pl. VI, fig. 4. It is found among mosses. I have not observed any palp, but intermediary chelicerae (pl. IX, fig. b) which, however, were not articulated at all as in other mites".

'There are a number of points in this description which, taken in conjunction with Hermann's drawings, suggest that it should not be accepted for any species of *Tyrophagus* at present known:

(1) *Form of the "abdomen" [i.e. the hysterosoma]*. – Characteristically the hysterosoma of *Tyrophagus* is far from spherical as in Hermann's species, being longer than it is wide, with obvious "shoulders" anteriorly and flattened dorsoventrally (see Fig. 35, p. 166) [i.e. in Robertson, 1959]. In Hermann's illustration (pl. VI, fig. 4) of *dimidiatus*, too, there is a carefully drawn curving line across the hysterosoma which seems likely to represent either a colour boundary or an additional suture. Neither of these interpretations would be applicable to a species of *Tyrophagus*.

(2) *Colour*. – In all known species of *Tyrophagus* the body cuticle is colourless, with the legs and apodemes only slightly darkened. None of them has a characteristic distribution of yellowish-green and white. Indeed, any trace of colour in the hysterosoma could only be due to body contents showing through the cuticle, and would appear towards the posterior end, not anteriorly as Hermann described.

(3) *Habitat*. – Oudemans (1924b) does not appear to have been successful in finding his species in moss, the habitat recorded by Hermann, nor have species of *Tyrophagus* been found there by other authors.
[*Note*: This position with regard to habitat cannot in

itself be taken as rendering the name *dimidiatus* inapplicable to species of the genus *Tyrophagus*. Since the latter are polyphagous, it may possibly be demonstrated that they occur in moss, as well as in other habitats as yet unrecognized. The present position, nevertheless, fails to offer any positive support for the view that the *dimidiatus* of Hermann is a species of *Tyrophagus*.]

(4) *Mouthparts*. – Hermann's description of the chelicerae appears to be the most significant statement of all. In the original French he referred to "des pinces intermēdiaires, qui n'ētoient cependant point articulées comme dans d'autres mites". But there is some doubt as to whether or not Hermann's illustration (pl. IX, fig. b) of the chelicerae is in agreement with his emphatic statement. If the written statement is accepted, then it must be assumed that Hermann's specimen was indeed one which lacked the articulation usual in other mites, and that the distally-placed lines in his illustration were contour lines and not joints. If this view is taken, then *dimidiatus* must be excluded from the genus *Tyrophagus* on the basis of the structure of its chelicerae. Alternatively it may be accepted that Hermann's illustration represents a chelicera with normal articulation of the type found in *Tyrophagus*. But this interpretation does not agree with the written description, and non-agreement between the two would make the identification of *dimidiatus* impossible, and so would also constitute grounds for rejecting it as the name of a species of *Tyrophagus*.'

5. There are thus at least three counts on which it appears that the interests of nomenclatural stability would best be served by using the plenary powers of the International Commission to suppress *dimidiatus* as a *nomen dubium*. These are, first, that present-day authorities either do not agree on the species of *Tyrophagus* to which the name *dimidiatus* Hermann, 1804, should be applied, or do not recognize it at all; secondly, that the characteristics of *dimidiatus* described by Hermann, in particular the shape of the abdomen, the colour, and the structure of the chelicerae, point to some form other than *Tyrophagus*; and, thirdly, that Hermann's description and illustration of the chelicerae, taken together, must be interpreted either as direct evidence that the species is not a *Tyrophagus* or that it is a species which is beyond recognition.

6. In the event of the International Commission taking the action suggested to suppress the name *dimidiatus* Hermann, 1804, then consideration must also be given to naming the species of *Tyrophagus* to which *dimidiatus* was applied by Oudemans in 1924. It was pointed out by the writer (*Aust. J. Zool.* vol. 7(2), pp. 153–4, 1959) that if *dimidiatus* is suppressed then *Tyroglyphus longior* Gervais, 1844 (*Hist. nat. Inst*. (Aptères) vol. 3, p. 262, pl. 35, fig. 5) becomes the first available name for that species. It is suggested that this name is acceptable both nomenclaturally and on zoological grounds, although no type is known to exist. To stabilize the position, the writer has taken the further step of designating a neotype for *longior*, and recognition of this action is now sought from the Commission.

7. The status of *Acarus putrescentiae* Schrank, 1781 (*Enum. Ins. Austr. ind*. p. 521) which Oudemans designated as the type of his genus *Tyrophagus*, also requires clarification, since no type specimen of *putrescentiae* is preserved and since some modern authorities consider the species to be unrecognizable. The writer (*Aust. J. Zool.* vol. 7(2), p. 151, 1959) has affirmed, from an examination of the Oudemans Collection held by the Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands, that Oudemans had a reasonably clear conception of the form he identified as the *putrescentiae* of Schrank, a species which is acceptable for inclusion in *Tyrophagus* on zoological grounds and whose name is an available one in the group. In the publication cited above, one of Oudemans' specimens is therefore designated the neotype of *putrescentiae*, a step which is now brought to the notice of the Commission as stabilizing both the species itself and also the genus *Tyrophagus* of which it is the type.

8. The International Commission on Zoological Nomenclature is therefore asked:–

(1) to use its plenary powers to suppress the specific name *dimidiatus* Hermann, 1804, as published in the binomen *Acarus dimidiatus*, for the purposes of the Law of Priority but not for those of the Law of Homonymy;

(2) to place the generic name *Tyrophagus* Oudemans, 1924 (gender: masculine) type-species, by original designation, *Acarus putrescentiae* Schrank, 1781, on the Official List of Generic Names in Zoology;

(3) to place the following specific names on the Official List of Specific Names in Zoology:–

(a) *putrescentiae* Schrank, 1781, as published in the binomen *Acarus putrescentiae* (type-species of *Tyrophagus* Oudemans, 1824) (as interpreted by the neotype designated by Robertson, 1959);

(b) *longior* Gervais, 1844, as published in the binomen *Tyroglyphus longior* (as interpreted by the neotype designated by Robertson, 1959;

(4) to place the specific name *dimidiatus* Hermann, 1804, as published in the binomen *Acarus dimidiatus* (as suppressed under the plenary powers in (1) above) on the Official Index of Rejected and Invalid Specific Names in Zoology;

(5) to place the family name TYROPHAGIDAE Oudemans, 1924 (type-genus *Tyrophagus* Oudemans 1924) on the Official List of Family-Group Names in Zoology.